Listing of Claims

This listing of claims replaces all prior versions, and listings, of claims in the application:

1 – 5 (Cancelled)

6. (New) A method for inter-cluster communication that employs register permutation, where clustered functional units have at least one global register file and at least one local register file;
the at least one global register file is partitioned into at least one sub-register file, wherein the at least one sub-register file can map to at least two clustered functional units respectively;
each of the at least one local register file maps to one of the clustered function units, wherein establishing a mapping relationship between a global register file, a local register file, and a clustered functional unit; and
the clustered functional units exchange data by permutation of the sub-register files of the at least one global register file through setting crossbar switches, without transferring the data, wherein the permutation maps the sub-register files of the at least one global register file to the clustered functional units.
7. (New) The method for inter-cluster communication that employs register permutation according to claim 6, wherein the permutation dynamically changes port mapping between the sub-register files of the global register files and the clustered functional units.
8. (New) The method for inter-cluster communication that employs register permutation according to claim 7, wherein the port mapping is implemented in accordance with a predefined routing structure.
9. (New) The method for inter-cluster communication that employs register permutation according to claim 6, wherein the size of the register files and the number of the said ports are both scalable.

10. (New) The method for inter-cluster communication that employs register permutation according to claim 6, further comprising any number of cluster structures.